

Bunker Hill
 AMD Mitigation Concepts
 2.1: West Fork Diversion
 Order of Magnitude Cost Opinion

DATE: 06/13/2000
 PROJECT NO.: 152215.FS.02
 ESTIMATE BY: D. Hedglin
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DESCRIPTION	QTY	UNIT	TOTAL UNIT COST	TOTAL COST	COMMENTS
Site Access Road					
Clear & Grub New Road	3,500	LF	8.62	\$30,153	asm 30'w & 50'/hour
Grade, Fill & Compact New Road	3,500	LF	76.32	\$267,137	encounter rock
Base Course on New Road	1,296	CY	24.92	\$32,307	
Grade & Improve Existing Road	400	LF	28.90	\$11,559	
Erosion & Sedimentation Control	1	LS	47,054.48	\$47,054	\$/LF allowance for ditches, culverts, silt fences, sed ponds, etc
Diversion Structure					
Diversion/Care of Water	1	LS	10,000.00	\$10,000	
Excavate for Sheetpile Dam	1,800	CY	17.23	\$31,014	
Native Backfill Around Sheetpiles	1,800	CY	13.30	\$23,940	
Sheetpile Wall for Cutoff	2,250	SF	30.00	\$67,500	
Excavate for Screen Structure	70	CY	17.23	\$1,206	
Native Backfill Around Screen Structure	20	CY	13.30	\$266	
Backfill Riprap Overflow Spillway	325	CY	39.95	\$12,984	
Construct Screen Intake Structure	15	CY	552.24	\$8,284	
Construct Transition Structure	15	CY	552.24	\$8,284	
Foundation Grout Curtain	1,500	LF	40.00	\$60,000	Includes diamond drilling, grout pipe, pressure testing, etc.
Bar Screen	1	LS	10,329.99	\$10,330	
Collector Pipe & Gabions					
Excavation	300	CY	17.23	\$5,169	
Imported Bed, Zone & Backfill	250	CY	31.62	\$7,906	
Waste	300	CY	3.29	\$986	
36" Perf. Collector Pipe	200	LF	68.62	\$13,724	
Regrade Stream	1	LS	20,676.10	\$20,676	
Gabion Sediment Traps	50	CY	183.25	\$9,162	
Pipeline & Access Road					
36" Pipeline in Imp Road	750	LF	127.24	\$95,430	including earthwork & fittings
30" Pipeline in New Road	750	LF	117.24	\$87,928	including earthwork & fittings
36" Pipeline in Unimp Road	1,700	LF	241.71	\$410,912	including earthwork & fittings
36" Overland Pipe	150	LF	214.48	\$32,171	including earthwork, supports & fittings
42" Slip Pipe for Overland Pipe	40	LF	127.24	\$5,090	including earthwork, supports & fittings
Anchor Block	2	EA	4,061.89	\$8,124	asm 6cy & 5hrs to form, rebar, place
Anchor Fitting	2	EA	1,172.38	\$2,345	allowance
Slip Joint Gasket	1	EA	1,186.19	\$1,186	based on quote for Lake Tapps outfall
Thrust Block	7	EA	822.38	\$5,757	
Air Vent	2	EA	586.19	\$1,172	
Cut-Off Trench Seepage Walls	30	EA	2,100.00	\$63,000	asm 7cy @ \$300/cy
22 1/2 Degree Elbow	10	EA	2,572.38	\$25,724	
Bureau of Reclamation Stilling Basin					
Structure Complete	4	LS	67,230.08	\$268,920	based on Lake Tapps design & estimate
SUBTOTAL				\$1,687,400	
MISC ALLOWANCE				10%	\$168,740
SUBTOTAL					\$1,856,140
CONTINGENCY				30%	\$556,842
SUBTOTAL					\$2,412,983
MOBILIZATION				15%	\$361,947
CONSTRUCTION TOTAL					\$2,774,930
SALES TAX ON MATERIALS				5.0%	\$33,487
ENGINEERING AND SUPPORT				20%	\$554,986
CONST MANAGEMENT				8%	\$221,994
CAPITAL TOTAL (ROUNDED)					\$3,590,000
ANNUAL O&M COST			\$27,700		
NPV OF ANNUAL O&M COSTS (30 YEARS @ 7% INTEREST)					\$344,000
TOTAL 30-YEAR PRESENT WORTH COST @ 7% INTEREST					\$3,934,000

NOTES:

Misc Allowance markup is to include items known to exist but cannot be quantified at this time.
 Contingency is for scope changes that are presently unforeseen.
 Mobilization includes bonds, insurance, temporary facilities, health & safety, demobilization, etc.